

Methods of Seismic Depth Soundings at Sea

SOV/49-58-7-3/16

the type of odographs in use - usually 50-100 km. Figure 3 shows one of the odographs prepared for a profile of the Caspian Sea.

Observations at the detonation point - Experience showed that the registrations of the soundwaves received from the detonations were very useful for the determination of the various data of sounding, thus helping to separate the fields of the secondary shocks.

Determination of places for ships and detonation points was carried out by means of the radiogeodesic methods if the distance from the shore was not great, otherwise the velocity of sound in water was applied with special investigation of hydrological conditions of the sea (temperature and saltiness).

In the intermediate regions between the land and deep sea, the length of each profile was 3-5 km.

The apparatus used. For the registration of the seismic waves at sea, the hydrophones with the amplifier placed next to the piezo-unit were used. For the secondary intensification, the usual low-frequency amplifier was employed.

A multi-channel registration was applied for the pointed

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method of observation (Figure 4).

Interpretation of Sea Observations.

Interpretation of seismic observations was carried out in two stages: the analysis of seismograms together with production of wave odographs and the reading of odographs (determination of seismic velocities, plotting maps, etc.), the character of work and the data collected by the mobile method of detonation is given below.

Types of wave correlation: The analysis of the seismograms was based on selecting and detecting of the main seismic oscillations. A special feature of the depth-sounding at sea was an application of the group wave correlation, i.e. working with a whole group of waves instead of a single wave. This method proved to be much superior in the investigation of the crustal thickness.

Detecting of the Main Wave on Multi-channel Positioning Seismogram.

One of the more important methods of detecting the wave on the seismogram was the determination of apparent velocities. The main wave or a group of waves on the printed seismograms

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was characterised by the quasi-sinusoidal shape of its tracing and could be distinguished by its amplitude (Figure 5). The group of waves was distinguished by both the absolute time of travel and the intensity.

Correlation of the Wave Groups on the Joint Seismograms Due to the distances between detonation points at sea being greater than the length of waves, the correlation of phases usually was not practical. However, it was possible to obtain a group correlation by observing the following points:

a) Pointed Recordings. To select a group of waves from a series of pointed recordings, a method of absolute time was applied. The travel times of the first waves of a group were plotted along the straight line on the odograph for the longitudinal profile or, along the hyperbolic curve on the transverse odographs.

A similar shape of the wave group had an equal period of oscillations; the same length of the group had an equal number of the separate waves of similar intensity. The intensity of each composite wave gradually decreased with an increase of distance.

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A particular difficulty of the pointed method of registration was the separation and detection of waves on some recordings. In this case, a shape of the recording and the intensity were considered.

Figures 6 and 7 represent the pointed seismograms obtained on the transverse (Figure 6) and longitudinal (Figure 7) profiles. Figures 3 and 8 show the group odographs constructed from the pointed seismograms.

b) Multi-pointed recordings. For detecting the wave groups and separating them from a series of multi-pointed recordings, the equal apparent velocities and a similar shape were considered. The straight line odograph was obtained from the longitudinal profile, while the hyperbolic odograph was obtained from the transverse profile. The apparent velocities from the separate seismograms were related to the apparent velocities of the wave front spreading along the sounding datum.

Change of Wave Group.

The best correlation usually was obtained of the first waves recorded. However, there were cases when the first

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waves were changed, i.e. at the intersection of odographs when the gradient changed or in the case of the fading wave. The latter case was due to the changes in the boundary of the sedimentations (Figure 9, group  $t_2$ ) or to the variations in the core structure (Figure 9, groups  $t_3$  and  $t_4$ ).

Construction of Seismic Cross-section

The other interpretations of the S.D.S. odographs did not differ much from the usual methods employed in the seismic survey. The problem of selecting of the medium and stratified velocities was of special importance. More experiments are needed in this matter but it can be said that the graphs showing the ratio of the medium velocity  $v$  to the depth  $H$  and the vertical odograph  $t(H)$  could be employed with advantage.

It should be noted that the method of mobile detonations was very productive, allowing the analysis of seismograms

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to be carried out during the periods of observation. This involved an advance planning and the corrections made on the spot for each profile, thus improving greatly the final results.

There are 9 figures and 15 references, 13 of which are Soviet and 2 English.

ASSOCIATION: Akademiya nauk SSSR, Institut fiziki Zemli  
(Institute of Terrestrial Physics of the AS USSR)

SUBMITTED: August 20, 1957

Card 10/10

- 1. Seismic waves--Applications
- 2. Seismological stations--  
Applications
- 3. Seismic waves--Recording devices
- 4. Earth--Wave transmission

SOV/49 -58-10-2/15

AUTHORS: Kosminskaya, I. P., Mikhota, G. G. and Tulina, Yu. V.

TITLE: The Structure of the Earth's Crust in the Pamir -Alay Zone  
According to the Data of Deep Seismic Sounding (Stroyeniye  
zemnoy kory v Pamiro-Alayskoy zone po dannym glubinnogo  
seysmicheskogo zondirovaniya)

PERIODICAL: Izvestiya Akademii Nauk SSSR, seriya geofizicheskaya,  
1958, Nr 10, pp 1162-1180 (and 2 plates) (USSR)

ABSTRACT: Work on deep seismic sounding in the Pamir -Alay Zone  
was suggested by Academician G. A. Gamburtsev. It was  
carried out under his direction and was a continuation of  
geological and geophysical explorations which have recently  
been carried out by the Geophysical Institute of the Academy  
of Sciences of the USSR in seismically active regions of  
Middle Asia in order to study the physics of earthquakes.  
The work reported in this paper was carried out by an ex-  
pedition which was directed by I. L. Nersesov and L. E.  
Aronov. The geological structure of various parts of the  
Pamir -Alay Zone has been studied previously and results

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SOV/49 -58-10-2/15

The Structure of the Earth's Crust in the Pamir-Alay Zone According  
to the Data of Deep Seismic Sounding

were reported in Refs. 2-11. As a result of the present work it was established that the structure of the earth's crust in mountain regions may be investigated by deep seismic sounding.. General features of the structure of the earth's crust in some regions of Southern Tian Shan' and Northern Pamir were obtained. The Mohorovičić surface and the surface of the basalt layer in this region have similar trends and extend from North-East to South-West. The depth of the basalt layer is between 15 and 40 km and the depth of the Mohorovičić surface is between 45 and 70 km. The following regularities have been deduced from profiles of the earth's crust in the Pamir-Alay Zone:

- a) in the transition from platform regions to mountain regions a considerable increase in the thickness of the earth's crust was observed within the range 30-70 km;
- b) in mountain regions plutonic boundaries have complex profiles with depressions or elevations of 15 km or more, and inclinations up to 10-12°;
- c) in mountain regions differences have been found in the structure of the earth's crust between Hercynian and Alpine

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The Structure of the Earth's Crust in the Pamir-Alay Zone According to the Data of Deep Seismic Sounding

foldings. Thus in Northern and Southern Tian Shan' the basalt layer has a large thickness while in the Northern Pamir the granite layer has a large thickness. A comparison of seismic data obtained during the above expedition with gravitational data for a number of regions in Middle Asia has shown that the character of the gravitational field is governed mainly by the form and the position of the Mohorovicic surface. The basalt layer is important in connection with the origin of anomalies. The maximum (in the USSR) negative anomaly was found in Northern Pamir (-450 mgal). There are 2 tables, 14 figures and 32 references, of which 29 are Soviet, 2 are English and 1 is German.

ASSOCIATION: Akademiya nauk SSSR, Institut fiziki Zemli (Academy of Sciences of the USSR, Institute of Physics of the Earth)

SUBMITTED: August 26, 1957.

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3(0)

## AUTHORS:

Gagel'gants, A. A., Gal'perin, Ye. I., SOV/20-123-7-39/54  
Kosinskaya, I. P., Krakshina, R. M.

## TITLE:

The Structure of the Earth's Crust in the Central Part of the  
Caspian Sea as Determined by Deep Seismic Sounding (Stroyeniye  
zemnoy kory tsentral'noy chasti Kaspiyskogo morya po dannym  
glubinogo seismicheskogo zondirovaniya)

## PERIODICAL:

Doklady Akademii nauk SSSR, 1958, Vol 123, Nr 3, pp 520-522  
(USSR)

## ABSTRACT:

Under the International Geophysical Year program, the Leningrad  
fiziki zemli AN SSSR (Institute of Physics of the Earth, AS  
USSR) in cooperation with the Vsesoyuznyy nauchno-  
issledovatel'skiy institut geofiziki (All Union Scientific  
Research Institute of Geophysics), the Azerbaiydzhanskiy nauchno-  
issledovatel'skiy Institut po dobychi nefti (Azerbaiydzhan  
Scientific Research Institute of Petroleum Production) as well  
as the Institut okeanologii AN SSSR (Oceanography Institute  
AS USSR) devised test apparatuses and methods of deep crustal  
seismic probing (SMF) from a boat (Refs 1-5). At the same time  
the subsurface structure of the Caspian Sea area was

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The Structure of the Earth's Crust in the Central  
Part of the Caspian Sea as Determined by Deep Seismic Sounding

SCV/20-123-3-12/54

investigated. The peculiarities of deep-crust seismic probing from a ship have already been described (Ref 4). The subsurface structure of the crust in the area in question is interesting from both the geologic and the geophysical standpoint. Major structural entities with different geological histories meet in this region: the Epihercynian table of Turkmeniya meets the folded belt of the Caucasus. The determination of the structure of the junction is important to the prospects of oil exploration. Figure 1 shows subsurface contours drawn on the principal separation planes between the structures; the depth limits are rather complex. An analysis of cross-sections and maps has indicated a scheme of the crust formation (Fig 2). The epihercynian table is composed of 3 layers: a) a thin sedimentary layer (2-3 km thick) with a seismic velocity of approximately 3 km/sec, b) a 10-15 km thick granite layer and c) a basalt layer of some 20-25 km thickness. The crust in the area of the table is about 30-35 km thick. In the contact area between table and folded belt the sedimentary layer thickens rapidly while the granite layer thins. In the actual folded-belt region the crust (here 40-45 km thick) contains only 2 layers:

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the sedimentary (more than 20 km thick) and the basalt. The great thickness of the sedimentary layer and the thin or lacking granite layer may be characteristic of certain zones of alpine folding which have in the past undergone intense folding and even now are undergoing folding. There are 2 figures and 4 Soviet references.

PRESENTED: June 26, 1958, by N. S. Shatskiy, Academician

SUBMITTED: June 9, 1958

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SOV/49-59-11-17/28

AUTHORS: Yepinat'yeva, A. M., and Kosminskaya, I. P.

TITLE: On Seismic Survey in China

PERIODICAL: Izvestiya Akademii nauk SSSR, Seriya geofizicheskaya, 1959, Nr 11, pp 1673-1683 (USSR)

ABSTRACT: The authors describe their visit to China where they were accompanied by Professor Ku Kung-hsü (Director of the Department of Geophysical Methods of Surveying, Institute of Geophysics, Chinese Academy of Sciences), Professor Ch'ih Hsin-lin (Director of Seismic Laboratory, Institute of Geophysics, Chinese Academy of Sciences), and young scientists Lin Chung-yen Li Kuei-chen. A. G. Ivanov, from USSR, went also with the authors. They were introduced to the seismic survey going on in the regions Tsaydam, Yuymyn', and Chendu. Some results of observations in these regions are given in the figures, which illustrate the following. Figs 1 and 2 - Seismograms from the region Tsaydam where: a - recorded waves  $t_1$  to  $t_4$  showing different slopes of co-phases, b - displacement of the co-phase axes of wave  $t_2$ ; the axis of wave  $t_1$  is normal. A shallow layer can be distinguished in a

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### On Seismic Survey in China

cross section shown in Fig 2. Fig 3 - The layout of detonation points (a) and seismographs (b) in Yu-men region. A seismogram obtained in this case is reproduced in Fig 4. Fig 5 - A system of observation stations for determining discontinuities in a sedimentary and the foundation layers in Yu-men region. Some of the resulting seismograms are reproduced in Fig 6 showing the waves  $t_2$ ,  $t_3$  and multiply reflected and refracted wave  $t_4$ . The wave  $t_4$  corresponds to the surface of foundation. The hodograph of the waves  $t_2$ ,  $t_3$  and  $t_4$  is given in Fig 7. The wave  $t_4$  is also shown in the seismograms, Figs 8 and 9. Fig 10 gives a seismic cross-section in the Su-pei region, where three types of layers can be distinguished: horizontal, lightly sloped and irregular. All the scientific research in the field of seismology is carried out in China by the following three institutions: 1 - Institute of Geophysics, Chinese Academy of Sciences, (Divisions of Seismology under Professor Tsin' Sin'-Lin', Gravimetry, Electro-survey). 2 - Department of Geophysics of the

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GAMBURTSEV, Grigoriy Aleksandrovich, akademik [deceased]; RIZNICHENKO, Yu.V., red.; MOLODENSKIY, M.S., red.; BEERZON, I.S., doktor fiz.-mat.nauk, red.; KEYLIS-BOROK, V.I., doktor fiz.-mat.nauk, red.; LYAPUNOV, A.A., doktor fiz.-mat.nauk, red.; YEFINAT'YEVA, A.M., kand.tekh.nauk, red.; KOSMINSKAYA, I.P., kand.fiz.-mat.nauk, red.; STARODUBROVSKAYA, S.P., mladshiy nauchnyy sotrudnik, red.; BERKGAUT, V.G., red.izd-va; MARKOVICH, S.G., tekhn.red.

[Selected studies] Izbrannye trudy. Moskva, Izd-vo Akad.nauk SSSR, 1960. 461 p. (MIRA 13:7)

1. Chleny-korrespondenty AN SSSR (for Riznichenko, Molodenskiy).  
(Prospecting--Geophysical methods)

KOSMINSKAYA, I.P.

S/169/61/000/012/001/089  
D228/D305

AUTHOR: Veytsman, P. S., Gal'perin, Ye. I., Zverev,  
S. M., Kosminskaya, I. P., and Krakshina, R. M.

TITLE: Some data on the structure of the crust in the  
transitional zone from the Asiatic Continent to  
the Pacific Ocean

PERIODICAL: Referativnyy zhurnal, Geofizika, no. 12, 1961,  
5, abstract 12A34 (V sb. Geol. resultaty prikl.  
geokhimii i geofiz. Razdel 2. M., Gosgeol-  
tekhnizdat, 1960, 37-42)

TEXT: Complex geophysical research was carried out on the  
structure of the crust in the transitional zone from the Asiatic  
Continent to the Pacific Ocean. The complex of methods included  
seismic surveying, aeromagnetic surveying, and gravimetry. Geo-  
logic investigations were also made in coastal districts. It  
was possible from the processing of preliminary data to expose

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S/169/61/000/012/001/089  
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Some data on...

3 main types of crustal structure: continental, oceanic, and  
intermediate. A schematic zoning of the study region was made  
from the crustal types, and transitional areas from one type to  
another were distinguished. The transitional region from a  
continental- to an oceanic-type of crust in the vicinity of the  
Kuriles Depression, where both the thinning-out of the supra-  
basaltic stratum and the rise of the surface of the basalt layer  
and the Mohorovicic surface are observed, is especially noted.  
[Abstracter's note: Complete translation.]

Card 2/2

REZANOV, I.A.; RASTVOROVA, V.A.; LEONOV, N.N.; Prinimali uchastiye:  
ANDREYEV, S.S.; GAL'PERIN, Ye.I.; DOMABEDOV, A.T.; KATS, A.Z.;  
KOSMINSKAYA, I.P.; LEONOV, N.N.; MASARSKIY, S.I.; MEDVEDEV,  
S.V.; PETRUSHEVSKIY, B.A.; PUCHKOV, S.V.; RASTVOROVA, V.A.;  
REZANOV, I.A.; SAVARENISKIY, Ye.P.; KHARIN, D.A.; Red karty:  
GAMBURTSEV, G.A.

Establishment of detailed seismic regions as exemplified by  
a region of western Turkmenistan. Biul. Sov. po seism. no.8:  
131-141 '60. (MIRA 13:10)

1. Institut fiziki Zemli AN SSSR.  
(Turkmenistan--Seismology)

3

S/011/61/000/001/001/001  
A054/A133

AUTHORS: Veytsman, P.S.; Gal'perin, Ye.I.; Zverev, S.M.; Kosminskaya, I.  
P.; Krakshina, R.M.; Mikhota, O.O. and Tulina, Yu.V.

TITLE: Some results of studying the Earth's crust in the area of the Kuril  
Island arc and the adjoining areas of the Pacific Ocean based on  
deep seismic sounding data

PERIODICAL: Izvestiya Akademii Nauk, SSSR. Seriya geologicheskaya, no.1, 1961,  
81 - 86.

TEXT: In 1957-58, Soviet geologists surveyed by deep seismic sounding the  
geology of the region between the Asiatic continent and the Pacific, the area of  
the Kuril Island arc and surrounding parts of the Pacific. These latter regions  
are particularly interesting, because in a rather narrow (300 - 400 km) zone the  
Earth's crust here shows great variations which can be classified in three main  
groups: 1) continental type crust, consisting of an upper sedimentary and two  
lower: a granite and a basalt layer. This zone is 20-30 km thick, the average  
velocity of longitudinal waves in this zone is not more than 6 km/sec. 2) The  
oceanic part of the crust consists of a thin sedimentary less than 1 km thick and

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Some results of studying the Earth's crust ...

a 5 - 10 km thick basalt layer. The wave velocity in this zone (outside the sedimentary layer) is about 7 km/sec. 3) The intermediate zone has an intermediate character both as regards thickness and structure of its layers (in general the sedimentary-basalt structure prevails). The classification into these three groups was based on the time-distance curves of primary waves and the ratio of average speed  $v$  to depth  $h$ . The geological map of the surveyed area shows that the intricate alternation of these three types of crust-structure cannot be observed in the direction from the island to the ocean only but also along the entire area, from the Hokkaido Island to the Peninsula of Kamchatka. The most intricate crust-structure is found in the area between the island arc and the Kurile-Kamchatka deep trench. According to the crust-structure this area can also be divided into three parts: a) its northern part shows a continental, b) its southern part partly a continental, partly an intermediate character, while c) the central part also consists of two structures: one of an intermediate and one of an oceanic character and seems to be the continuation of the deep-water area of the Okhot Sea. In order to establish the changes in propagation velocity in the transition zone of one typical area of the crust into another, the average  $\bar{V}$ -values have been determined at a height of 7 km from the bottom. The comparison of the velocity curves with the relief of the bottom revealed a strict regularity in the relations: the oceanic

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S/011/61/000/001/001/001

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Some results of studying the Earth's crust ...

plateau corresponds to the highest average values of  $\bar{V}$ , which drop sharply in the direction from the oceanic plateau to the tabular zone, in northern and southern direction as well, in the area of the eastern slope of the deep trench. The lower values of  $V$  in the tabular zone are connected with thick sedimentary layers, (near Kamchatka). The areas close to the central and the southern part of the arc display high  $\bar{V}$  values and the high  $\bar{V}$ -values for the oceanic plateau show a stable character (about 7 km/sec). Between the island arc and the deep trench however, there are also extensive low-water areas. When comparing the bathymetric data referring to this area and the structure of the crust it can be established that the low-water areas of the Pacific at the northern and southern regions of the arc correspond to the continental type of the crust, whereas the deep-water areas of the central part of the island arc correspond to the intermediate type of the Earth's crust. The same regularity is also observed for the western coast of the island arc. Gravimetric data show that in regions of the continental type crust structure the anomalies of the gravity force display low values as compared with those registered for the ocean, while in the zones of intermediate crust structure the anomalies also have medium values between oceanic and continental anomalies. The boundaries between the zones of various  $\Delta g$  values correspond roughly to the boundaries between the zones of various crust-

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Some results of studying the Earth's crust ...

structures. The most intense volcanic activity for the past 200 years was recorded for the central part of the arc, with an intermediate crust-structure, while the highest seismic activity was observed in areas with a continental type structure of the core. In the Kuril arc remarkable and intensive recent movements have been observed, according to which the area can again be divided into three parts: in the northern and southern parts a remarkable up-lift is established, whereas the central part - bordered by the Bussol' and Kruzenshtern straits has subsided. There are 4 figures and 9 Soviet-bloc references.

ASSOCIATION: Institut fiziki Zemli AN SSSR, Moskva (Institute of Geophysics, AN USSR, Moscow)

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S-049 61 000 006 004/014  
D218/D306

AUTHORS Kosminskaya, I.P. and Krakshina, R.N.

TITLE On postcritical reflections from the Mohorovičić discontinuity

PERIODICAL Akademiya nauk SSSR, Izvestiya, Seriya geofizicheskaya,  
no. 6, 1961 822-851

TEXT This paper was communicated to the 12th IGY Conference at Helsinki in 1960. Postcritical reflections are defined as reflected waves which are recorded at distances greater than the distance to the initial point of the hodograph of waves reflected at the particular discontinuity. The present paper is concerned with 1) Data on the kinematics and dynamics of postcritical reflections from the Mohorovičić discontinuity; 2) characteristics of recorded waves; 3) the ratio of amplitudes of reflected and refracted waves; and 4) determination of the effective velocities in the earth's crust and the derivation of the Mohorovičić discontinuity. ✓

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S-049 61 000 006 004 011  
D218/D306

On postcriticalo

discontinuity from the hodographs of P<sub>refl</sub> waves. There are 11 figures  
and 10 Soviet-bloc references. ↴

ASSOCIATION: Akademiya nauk SSSR, Institut fiziki Zemli (Academy of  
Sciences USSR, Institute of Physics of the Earth)

SUBMITTED July 24, 1960

Card 2 3

KOSMINSKAYA, I.P.

Structure of the earth's crust of deep-water troughs in the Sea of Okhotsk, Black, Caspian, Japan, and Bering Seas based on seismic data.  
Biul.MOIP.Otd.geol. 36 no.6:99-100 N-D '61. (MIRA 15:7)  
(Earth surface)

AKSENOVICH, G.I.; ARONOV, L.Ye.; GAGEL'GANTS, A.A.; GAL'PERIN, Ye.I.;  
ZAYONCHKOVSKIY, M.A.; KOSMINSKAYA, I.P.; KRAKSHINA, R.M.;  
VERES, L.F., red. izd-va; TIKHOMIROVA, S.G., tekhn. red.

[Deep seismic sounding in the central part of the Caspian Sea]  
Glubinnoe seismicheskoe zondirovanie v tsentral'noi chasti Kas-  
piiskogo moria. [By] G.I. Aksenovich i dr. Moskva, Izd-vo Akad.  
nauk SSSR, 1962. 150 p. (MIRA 15:8)  
(Caspian Sea—Earth—Surface) (Seismology)

AVER'YANOV, A.G.; VAYTSMAN, P.S.; GAL'PERIN, Ye.I.; ZVEREV, S.M.;  
ZAYONCHKOVSKIY, M.A.; KOSMINSKAYA, I.P.; KRAKSHINA, R.M.;  
NIKHOTA, G.G.; TULINA, Yu.V.

Deep seismic sounding in the transition zone between the  
continent of Asia and the Pacific Ocean during the International  
Geophysical Year. Izv. AN SSSR, Ser. geofiz. no. 2:169-184 F '61.  
(MIRA 14:2)

1. Institut fiziki Zemli AN SSSR  
(Soviet Far East--Seismometry)  
(Earth--Surface)

KOSMINSKAYA, I.P., RIZNICHENKO, YU.V.

"Study of the earth's crust in Eurasia."

Report submitted to the Symposium on Results of the IGY-IGC (Intl.  
Geophysical Year)      Los Angeles, California      12-16 Aug 1963

KOSMINSKAYA, I.P.; ZVEREV, S.M.; VEYTSMAN, P.S.; TULINA, Yu.V.;  
KRAKSHINA, R.M.

Basic features of the structure of the earth's crust under the  
Sea of Okhotsk and the Kurile-Kamchatka zone of the Pacific Ocean,  
based on deep seismic sounding data; results of the IGY. Izv. AN  
SSSR. Ser. geofiz. no.1:20-41 Ja '63. (MIRA 16:2)

1. Institut fiziki Zemli AN SSSR.  
(Soviet Far East--Submarine geology) (Seismology)

KOSMINSKAYA, I. P.

Present state of gravimetric and seismic measurements in the oceans.

Title: Conference on problems of marine magnetic surveys (held in Moscow in April 1962).

Source: Okeanologiya, v. 3, no. 4, 1963, p. 752

KOSMINSKAYA, T.P.

Classification of crustal structures based on seismic data.  
Bull. Sov. po seism. no.15:95-100 '63. (MIRA 17:4)

ACCESSION NR: AR4033586

5/0169/64/000/002/0005/0008

SOURCE: Ref. zh. Geofiz., Abs. 2024

AUTHOR: Kosminskaya, I. P.

TITLE: Study of the earth's crust in the USSR during the International Geophysical Year

CITED SOURCE: Sb. Seyemol. issledovaniya. No. 5. M., AN SSSR, 1963, 86-123

TOPIC TAGS: geology, geophysics, seismology, Mohorovicic discontinuity, seismic boundary, regional geology

TRANSLATION: The author discusses the results of work on study of the earth's crust in various regions of the USSR during the IGY period. On land the work was carried on within the limits of the Baltic shield, the Russian platform (its southeastern part), Kazakhstan, southeastern Turkmeniya, Fergana, northern Kazakhstan and Bukharo-Khibinskaya Oblast. In all the cross sections obtained for platforms in regions of unbroken bedding of the surface of the consolidated basement the deep boundaries were close to horizontal. In regions of plunging of the basement there also is plunging of deep boundaries, although in certain cases (especially in

Cord 1/3

ACCESSION NR: AR4033588

Kazakhstan) this conformity between the behavior of the surface of the basement and deep boundaries is not observed. The thickness of the earth's crust is as follows: for the Baltic shield and the Russian platform -- 37-40 km, Turkmeniya -- 40-50 km, Bukhara -- 38-45 km, Fergana -- 43-53 km, Kazakhstan -- 40-50 km. Everywhere the thickness of the crystalline crust proper is almost constant, 35-40 km (with the exception of Kazakhstan); intermediate boundaries of the earth's crust with velocities of 6.4-6.9 km/sec and above 7 km/sec were detected. It is assumed that only two seismic boundaries can be related to geology -- the surface of the basement, constituting the upper boundary of the consolidated crust, and the Mohorovicic discontinuity -- the lower boundary of the crust. Sea observations were made in the Black and Caspian Seas. Within the limits of the latter, in the transition region from the Turkmen platform, there is a plunging of all deep boundaries. At the same time, the thickness of the crust in the central part of the South Caspian Depression attains 45 km, and the so-called "granite" layer disappears. The boundary between the platform and depression is defined clearly. In the Black Sea, with a transition from the continental slope to the deep-water part, there is an increase in the thickness of the sedimentary stratum and a wedging-out of the "granito" layer. The thickness of the sediments at the center of the Black Sea attains 12 km and the depth of the Mohorovicic discontinuity is 22 km. In the transitional zone from the Asiatic continent to the Pacific Ocean work also was done for the most part at sea.

Cord. 2/3

ACCESSION NR: AR4033586

A characteristic of the cross sections of the transitional zone is an almost quadruple increase in crustal thickness in the direction from the ocean to continent. At the same time there is a change in the velocity composition of the crust: in the ocean there is a layer with a velocity of 6.6-6.8 km/sec and a thin sedimentary layer (1 km). In the intermediate zone with a suboceanic crust the "oceanic" layer is accompanied by a sedimentary layer of approximately the same thickness. With a transition to the central and northern parts of the Sea of Okhotsk velocities of 6 km/sec begin to predominate, and velocities of about 6.5 km/sec are detected conditionally in the lower part of the crust. This layer is detected reliably on the continent. It is emphasized that the data on crustal structure obtained as a result of IGY work make it possible to solve more decisively a number of problems involved in evolution of the earth's crust in the process of formation of the continents and oceans. Bibliography of 54 titles. G. Reysner

DATE ACQ: 31Mar64

SUB CODE: AS

ENCL: 00

Card 3/3

KOSMINSKAYA, I.P.

Problems affecting the study of the earth's crust as discussed  
at the 13th Assembly of the IGYS. Izv. AN SSSR. Ser. geofiz.  
no.2:261-263 F '64. (MIRA 17:3)

RIZNICHENKO, Yu.V.; KOSMINSKAYA, I.P.

Nature of the stratification of the earth's crust and the upper  
mantle. Dokl. AN SSSR 153 no.2:323-325 N '63. (MIRA 16:12)

1. Institut fiziki Zemli im. O.Yu.Shmidta AN SSSR.
2. Chlen-korrespondent AN SSSR (for Riznichenko).

GAL'PERIN, Ye.I., otv. red.; KOSMINSKAYA, I.P., otv. red.

[Crustal structure in the transitional area from the  
Asiatic continent to the Pacific Ocean] Stroenie zemnoi  
kory v oblasti perekhoda ot Azjatskogo kontinenta k  
Tikhomu okeanu. Moskva, Izd-vo "Nauka," 1964. 307 p.  
(MIRA 17:6)  
1. Akademiya nauk SSSR. Institut fiziki Zemli.

L 21824-65 EWT(1) SSD/AFNL/AFETI/ESD(t) GW  
ACCESSION NR: AP5004560

S/2519/63/000/015/0095/0100

AUTHOR: Kosminskaya, I. P.

TITLE: Classification of the structures of the earth's crust according to seismic data

SOURCE: AN SSSR, Sovet po seismologii. Byulleten', 1963, no. 15, 95-100

TOPIC TAGS: physical geology, seismology

ABSTRACT: In recent years Soviet geophysicists have carried out extensive research programs of several types to provide enough data to permit a detailed and definitive classification of the earth's crustal types and structures. The basic method used for this purpose has been deep seismic sounding. A proposed classification based on the results of these soundings (summarized in the table below) identifies four major categories of structures in four types of crust.

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L 21824-65  
ACCESSION NR: AP5004560

D  
Structures of the earth's crust according to seismic data

Properties	Type of crust		
	Continental	Oceanic	Subcontinental
Category I - Identified by general type; general type is identified by valuations of geological layers comprising the crust;			
sedimentary layer, $V = 3$ km/sec	•	•	•
"granitic" layer, $V = 6$ km/sec	•		
"basaltic" layer, $V = 5.5 - 7.0$ km/sec	•	•	"granitic-basaltic"
lower limit of crust (Moho), $V = 8$ km/sec	•	•	•
Category II - identified within Category-I structures according to their position	1. Continents, $30 \times 30 \times 30$ km 2. Shallow-water sections of continents, $10 \times 10 \times 10$ km 3. $30 \times 30 \times 30$ km	1. Ocean, $10 \times 10 \times 10$ km 2. Oceanic basins, $10 \times 10 \times 10$ km 3. $30 \times 30 \times 30$ km	platforms, $10 \times 10 \times 10$ km 1. Shallow-water sections of oceans, $10 \times 10 \times 10$ km 2. Deep-sea basins, $10 \times 10 \times 10$ km 3. $30 \times 30 \times 30$ km 1. Islands of island arcs, $10 \times 10 \times 10$ km 2. Volcanic islands, $10 \times 10 \times 10$ km 3. Oceanic ridges

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ACCESSION NR: AP5004560

<p><b>Category III</b> - identified within Category-II structures according to relief of base and crystal concentration/dimensions, and by thickness of unmodified layers</p>	<p>1. Areas of large tabular apophyses of the felsic and mafic, granular, tabular, boudinaged, thin, even (1-3 mm) or columnar pyroxene (plagioclase, olivine). 2. Areas of deep tabular zones of felsic (granular) areas. 3. Areas of non-tabular surface of crystal concentration (anomalous).</p>	<p>1. Areas of large tabular apophyses of the felsic and mafic, granular, tabular, boudinaged, thin, even (1-3 mm) or columnar pyroxene (plagioclase, olivine). 2. Areas of deep tabular zones of felsic (granular) areas. 3. Areas of non-tabular surface of crystal concentration (anomalous).</p>	<p>Various conditions characterized by varying thicknesses of "bullock" layers, for example: 1. The black and tan/green base 2. The red and reddish-brown base 3. The white, yellow, and brown base</p>	<p>No data</p>
<p><b>Category II</b> - identified within Category-III structures according to specific relief features of base, by both dimensionality and by crystal layer thickness (spinifelization)</p>	<p>1. Bullock and domesque within major apophyses. 2. Tabular zones with various crystal rocks and with varied thicknesses of the "bullock" and "domeque" layers. 3. Various types of domeque; intertongue, tabular, tabular, etc.</p>	<p>1. Bullock and domesque within major apophyses. 2. Tabular zones with various crystal rocks and with varied thicknesses of the "bullock" and "domeque" layers. 3. Various types of domeque; intertongue, tabular, tabular, etc.</p>	<p>Local doming and mafic alternating within individual synclines</p>	<p>No data</p>

**Point 8** indicates principal legal intermediaries play a specific type of role

\* The seismic surface of consolidation at the instant of unloading is defined as a boundary having the features of a wave field characteristic for vertically layered media.

Card 3/4

L 21824-55  
ACCESSION NR: AP5004560

ASSOCIATION: none

SUBMITTED: 00

INCL: 00

SUB CODE: ES

NO JREF B&W: 008

OTHER: 001

FSB v. 1, no. 2

Card 4/4

VEYTSMAN, P. S.  
KOSMINSKAYA, I. P.

L-31816-65 ENT(1)/EWA(h) Feb GW  
AM4045250 BOOK EXPLOITATION

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84

Akademiya nauk SSSR. Institut fiziki zemli im. O. Yu. Shmidtta

Structure of the earth's crust in the zone of transition from the continent of Asia to the Pacific Ocean (Strukturnye zemnye kory v oblasti perekhoda ot Asiatskogo kontinenta k Tikhomu Okeanu) Moscow, Izd-vo "Nauka", 1964. 307 p. illus., biblio., foldin charts (in portfolio). Errata slip inserted. 1200 copies printed. Responsible editors: Ye. I. Gal'perin, I. P. Kosinskaya; Editor of the publishing house: S. I. Misarskiy; Technical editors: Ye V. Makuni, S. G. Tikhomirova

TOPIC TAGS: area seismic sounding, earth crust, geophysics, international geophysical year, ocean, seismic wave

PURPOSE AND COVERAGE: This monograph is devoted to studies by the method of deep seismic sounding (GSZ) in the zone of transition from the Asiatic continent to the Pacific Ocean (Kamchatka, the Kurile peninsula, Bering Sea, etc.) during the International Geophysical Year (IGY). The material is presented as a collection of individual chapters, although all are devoted to a single problem and are

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L 31816-65  
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9

essentially parts of one book. The authors express their gratitude to Professor V. V. Fedynskiy, Chairman of the working subgroup of the Sovetskiy Natsional'nyy Konitet, initiator and organiser of complex geophysical research, and also to Corresponding Member of the Academy of Sciences of the USSR V. V. Belousov. The concluding chapter was prepared by A. G. Aver'yanov, P. S. Veytsman, Ye. I. Gal'perin, S. M. Zverev, and I. P. Kosminskaya.

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Ch. 2. Dividing the region for investigation into zones according to types of seismic material (I. P. Kosminskaya) - - 12
Ch. 3. Special kinematic characteristics of multiple waves connected with deep discontinuities (Ye. I. Gal'perin) - - 21
Ch. 4. Dynamic characteristics of deep waves for certain models of the earth's crust (A. G. Aver'yanov, I. P. Kosminskaya, G. A. Yaroshevskaya) - - 39

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Ch. 5. Results of studying a sedimentary stratum in the Sea of Okhotsk and the Kurile-Kamchatka Zone of the Pacific Ocean (S. M. Zverev) -- 90  
Ch. 6. The Magadan-Kolyma continental contour (N. I. Davydov, Ya. E. Shvarts) --  
Ch. 7. The northern and central parts of the Sea of Okhotsk (Sections 9-14 - 14-M) (I. P. Kosminskaya, R. N. Krakshina, I. N. Pavlova) -- 117  
Ch. 8. The southern part of the Sea of Okhotsk (I. N. Pavlova) -- 120  
Ch. 9. The southern and central parts of the Pre-Kurile Zone in the Pacific Ocean (Yu. V. Tulina, V. I. Mironova) -- 199  
Ch. 10. The northeastern part of the Kurile-Kamchatka Zone of the Pacific Ocean (P. S. Veytsman) -- 229  
Ch. 11. Pre-Komandor sections of the Bering Sea and the Pacific Ocean (I. P. Kosminskaya) -- 264  
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Conclusions -- 294  
Initial treatment of seismographs (V. L. Mironova) (Appendix) -- 299  
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Cord 3/A3

KOSMINSKAYA, I.P.

, Study of the earth's crust during the IGY. Geofiz. biul. no.14:168-  
178 '64. (MIRA 18:4)

L 52374-55 EWT(1)/EWA(h) Feb GW

ACCESSION NR: AP5008087

UR/0030/65/000/002/0051/G057

19

AUTHOR: Kosminskaya, I. P. (Candidate of physico-mathematical sciences)

18

3

TITLE: Investigations of the earth's crust by seismic methods 12

SOURCE: AN SSSR. Vestnik, no. 2, 1965, 51-57

TOPIC TAGS: seismology, geophysics, geology

ABSTRACT: A short paper by I. P. Kosminskaya of the Institute of Physics of the Earth, Academy of Sciences USSR, summarizes the results of geophysical (mainly seismological) studies of the earth's crust and upper mantle carried out in the USSR during the past 25 years. Areas covered by detailed seismological studies of several types extend from the Baltic Shield and the Kurile Islands — Kamchatka Peninsula (Sea of Okhotsk — Pacific Ocean) areas in the north, to the seismic belt between the Caspian, Black, and Aral Sea basins eastward to the Pamirs and Tien-Shan Mountains in the south (Fig. 1).

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ACCESSION NR: AP5008087

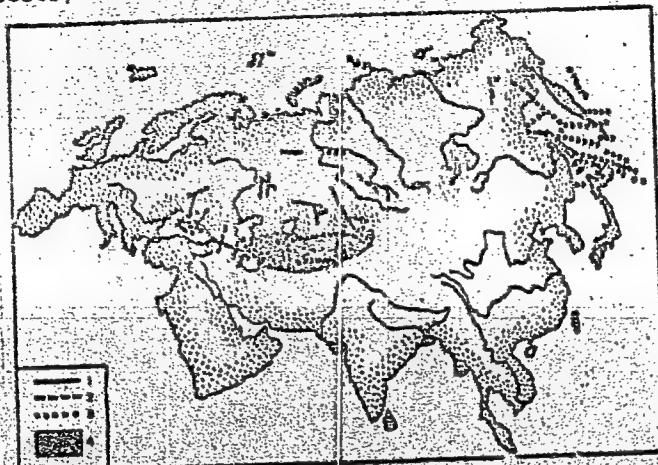


Fig. 1. Regions covered by detailed studies of the earth's crust (1940-1962)  
(Some of the results of 1962 work are still appearing in 1964-1965 publications.)  
1, 2, 3- Deep seismic-sounding observations; 4- seismic profile observations.

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L 52374-65

ACCESSION NR: AP5008087

Deep seismic-sounding methods, originally proposed by G. A. Gamburtsev for studying the continental crust, have played a leading role in Soviet investigations of the crust and mantle in both seismic and non-seismic areas. Observations of oceans and inland seas have been carried out by American and European methods, supplemented by the basic features of the Soviet deep seismic-sounding methods. Crustal properties determined have included the thickness of both the crust and upper mantle (continental and oceanic), the propagation velocities of seismic waves, and the relief characteristics of the several major and minor discontinuities. Results obtained from studies of three typical continental areas in the SSSR are summarized and tabulated in fig. 2.

The relief of the several, generally conformably parallel, discontinuities was found to be many times that of either the earth's surface or ocean bottoms. For instance, the maximum continental surface relief in the SSSR is about 8 km., but that of the surface of the consolidated crust is about 20 km., and that of the Mohorovicic discontinuity, about 40 km. Under oceanic areas such as the Sea of Okhotsk, the bottom relief varies from hundreds of meters to 3.5 km., but the consolidation surface under it varies between 1 and 9 km and that of the Moho, from 15 to 35 km (Figs. 3 and 4).

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ACCESSION NR: AP5008087

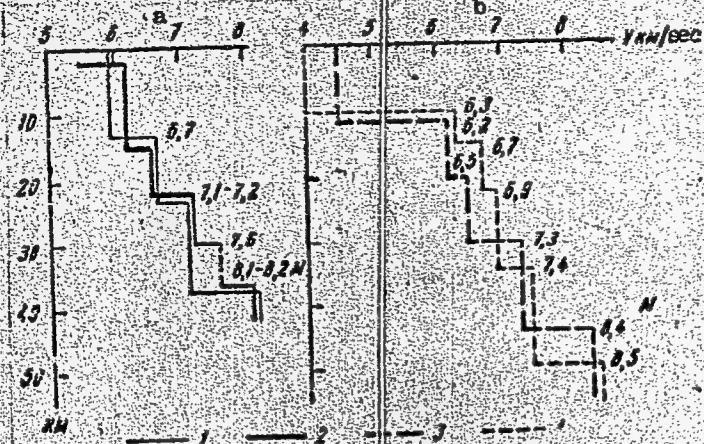


Fig. 2. Velocity change with depth in the crust  
of shields and platforms (a) and downwarps (b).

1 - Baltic Shield; 2 - Russian platform; 3 -  
Fergana depression; 4 - Kogen-dag downwarp.

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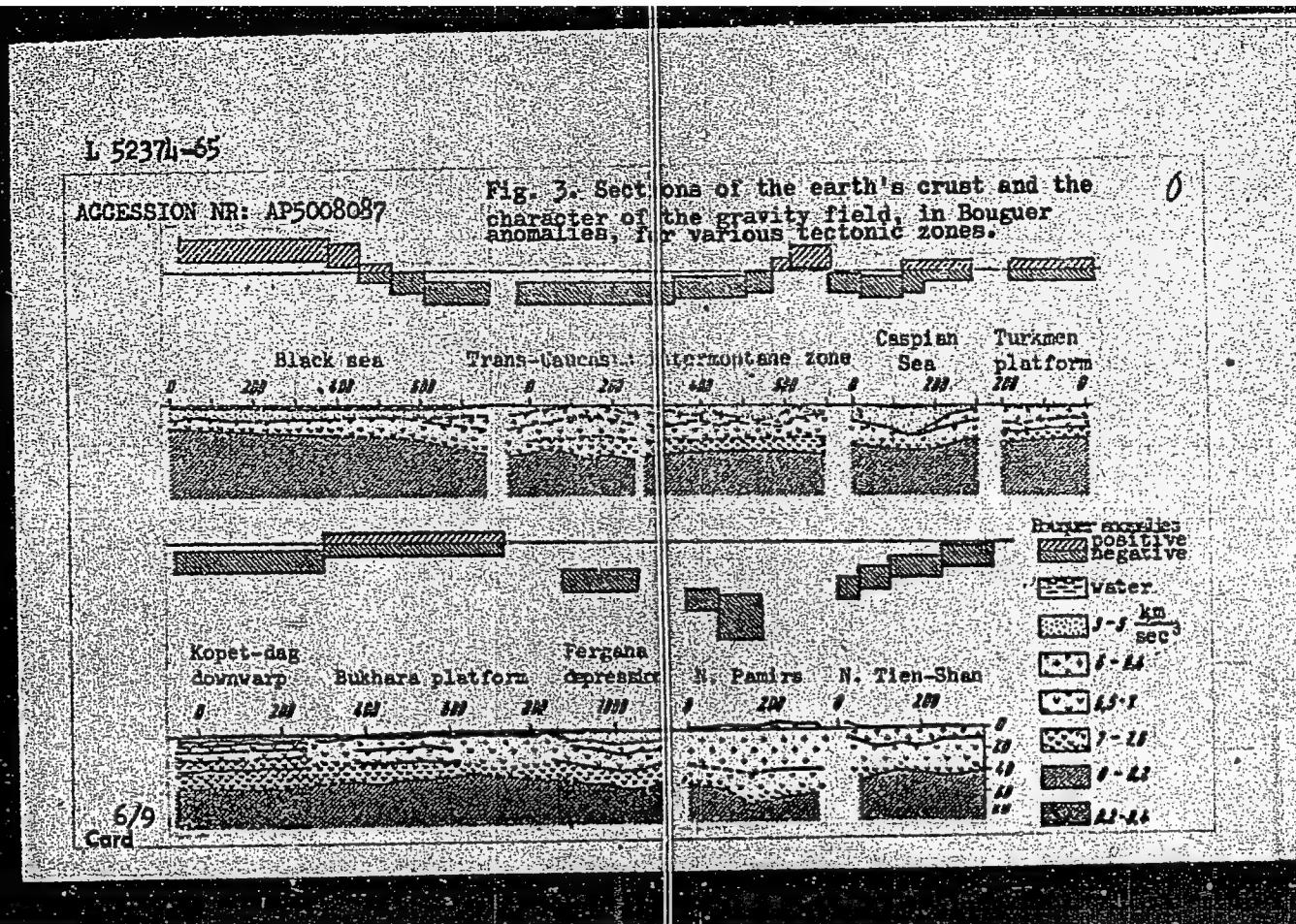
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ACCESSION NR: AP5008087

Combined geological and geophysical evidence points up the fact that while the structure of the crust and upper mantle consists of series of horizontally disposed, major (continents oceans) and minor (platforms and geosynclines) blocks distributed over the entire earth's surface, there is also an almost uniform vertical layering identified by velocity of seismic wave propagation, which cuts across these structures irrespective of whether these structures are ancient platforms and shields or whether they are youthful platforms, intermontane basins, or foredeeps. This suggests that the discontinuities separating these layers reflect recent changes in the crustal composition of the earth brought about by fluctuations in internal heat or other factors which have produced so-called "metamorphism fronts."

Two tasks are seen by the author as posing major challenges to Soviet geologists and geophysicists. The first, and most important, is the need

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for making more detailed studies of the crust and upper mantle in various tectonic zones to determine the relationships between deep-seated and surface tectonics and the nature of magmatism and metamorphism. Such research involves the coordinated efforts of geophysicists, geochemists, and geologists. Programs of this type are already under way in the Caucasus, Baltic Shield, the Urals, and in a few areas in Central Asia. Deep-seismic-sounding research techniques and equipment, improved for easier and faster handling and greater sounding depths, are expected to play a major role in these operations.

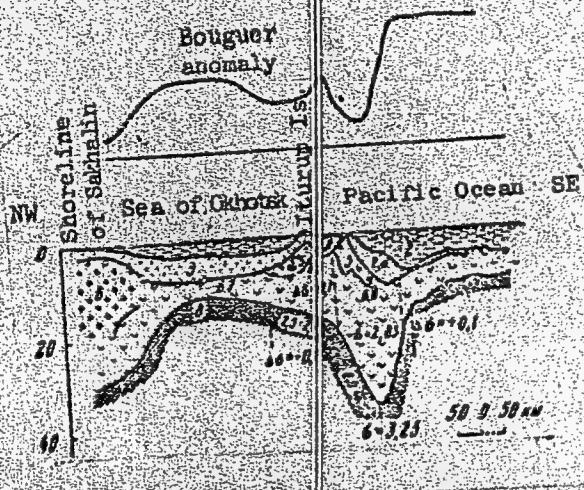
The second task involves research on the nature of the seismic discontinuities in the crust and upper mantle. Preference is to be given to the scientific rather than the applied aspects and will emphasize such factors as wave absorption, the reflective and refractive properties of the media acting as "mirror" surfaces, and the "thickness" of the major and minor discontinuities defining the sharpness of the zone of transition.

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ACCESSION NR: AP5008087

Fig. 4. Section of the earth's crust and field, in Bouguer anomalies, for the transition zone between the continent and the ocean along the Southern Sakhalin-Southern Kurile-Pacific Ocean profile. Numbers - velocity in km/sec;  $\Delta$  - density excess in  $\text{g}/\text{cm}^3$ .



Card 8/9

<p>L 52374-65 ACCESSION NR: AP5008087</p> <p>from one layer to another. A wide range of seismic studies involving theoretical, experimental, and modelling techniques, in conjunction with the ever-increasing use of high-speed electronic computers, is planned for the immediate future. Here, too, seismic methods, supplemented by deep drilling, are expected to play an important part.</p>			
<p>ASSOCIATION: Institut fiziki Zemli im. Yu. Shmidta Akademii nauk SSSR (Institute of Earth Physics, Academy of Sciences, SSSR)</p>			
SUBMITTED: 00	ENCL: 00	SUB CODE: ES	
NO REF SOV: 000	OTHER: 000	FSB: v. 1, no. 7	
<p>9/9</p>			

KOSMINSKAYA, I.P.

Problems of hodographic seismic sounding of the earth's crust  
and upper mantle as discussed at the Seventh Conference of  
Geophysicists of the European-Asian Region (held in Moscow in  
June, 1964). Izv. AN SSSR. Fiz. zem. no.6:91-95 '65.

(MFA 18:7)

I. Institut fiziki Zemli AN SSSR.

L 1298-66 E.T(1)/E.M(h) GW  
ACC NR: AP6000043

SOURCE CODE: UR/0387/65/000/008/0012/0020

38

AUTHOR: Cherveni, V. F.; Yepinat'yeva, A. M.; Kosminskaya, I. P.

ORG: Institute of Physics of the Earth, Academy of Sciences, SSSR (Institut fiziki Zemli Akademii nauk SSSR)

B

TITLE: Singularities of reflected and head waves around the critical point

SOURCE: AN SSSR. Izvestiya. Fizika Zemli, no. 8, 1965, 12-20

TOPIC TAGS: seismic wave, critical point, ~~hodograph seismic prospecting~~, seismography

ABSTRACT: The authors give the characteristics of the principal singularities in the kinematics and dynamics of seismic waves near the origin and compare them with experimental data from seismic prospecting and deep seismic sounding. Most of the calculations were done for an interface where the parameters of the ambient medium are close to those of the Mohorovicic discontinuity. Theoretical seismograms in the region of the origin are given together with amplitude spectra of waves for two different types of pulses. These curves showed that there is very little change in the wave spectrum near the point of origin. This stability is confirmed by experimental

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Card 1/2

I. 1299-66  
ACC NR: AP6000043

seismograms and deep seismic sounding amplitude curves. The amplitude curve for complex oscillation has a maximum which is shifted toward greater distances with respect to the geometric point of origin. This shift increases with greater velocity ratios at the interface and with a reduction in the frequency of the recorded oscillations. Travel-time curves are given for the head and reflected waves calculated from exact formulas and from formulas for radial approximations. Practical possibilities for the use of seismic recordings around the critical point are discussed. Orig. art. has: 10 figures.

SUB CODE: 08/ SUBM DATE: 09Sep64/ ORIG REF: 008/ OTH REF: 003

jrn

Card 2/2

KOSMINSKAYA, L.B.; SHEYNMANN, Yu.M.

Some characteristics of the structure and development of the  
earth's crust in the intermontane and marginal troughs.  
Biul. MOIP. Otd. geol. 40 no. 5:5-16 My-Je '65.  
(MIRA 18:8)

GAYNANOV, A.C.; TULINA, Yu.V.; KOSMINSKAYA, I.P.; ZVEREV, S.M.; VEYTSMAN,  
P.S.; GOLOV'YEV, O.N.

Complex interpretation of the materials on geophysical  
observations in the Sea of Okhotsk and Kurilo-Kamchatka zone  
of the Pacific Ocean. Seism. issl. no.6:60-65 '65.  
(MIRA 18:9)

L 21427-66 ENT(1)/FCC/EWA(h) GW

ACC NR: AT6010298

SOURCE CODE: UR/3195/65/000/006/0060/0065

AUTHOR: Gaynanov, A. G.; Tulina, Yu. V.; Kosinskaya, I. P.; Zverev, S. M.;  
Veytsman, P. S.; Solov'yev, O. N.

ORG: none

TITLE: Comprehensive interpretation of data from geophysical observations in the  
Sea of Okhotsk and the Kurile-Kamchatka zone of the Pacific OceanSOURCE: AN SSSR. Mezhdunovostvennyy geofizicheskiy komitet. Seismicheskiye  
issledovaniya, no. 6, 1965, 60-65TOPIC TAGS: seismology, gravimetry, geomagnetism, deep seismic sounding, geophysical  
anomaly, transition zoneABSTRACT: Data on the earth's crust<sup>1/4,55</sup> acquired during the IGY<sup>1/2</sup> from geological and  
geophysical studies (by magnetic, gravimetric, and seismic methods) in the transi-  
tional zone between Asia and the Pacific Ocean were used to investigate two problems:  
1) qualitative comparison of special features of anomalous gravitational and magnetic  
fields with structures of the earth's crust determined by seismic data (deep seismic  
sounding); and 2) some results from a quantitative comparison of gravitational and  
magnetic anomalies with deep seismic-sounding data. A map of magnetic anomalies  
shows moderate isometric anomalies in the Sea of Okhotsk and pronounced anomalies  
in narrow belts in the Sea of Okhotsk, along the Kurile-Kamchatka ridge and adjacent

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L 21427-66

ACC NR: AT6010298

parts of the Pacific, and near the Komandorskiye Islands. The sources of magnetic anomalies in the North Okhotsk and Sakhalin depressions seem to be confined to the uppermost or lowermost portions of the "granitic" layer and the upper part of the "basaltic" layer. In areas in the Pacific off the Kurile Islands, the anomalies are in the uppermost part of the mantle, and east of the deep offshore trench, they are in the upper mantle and the "basaltic" layer. It can be assumed that these magnetic anomalies are caused by processes associated with the formation of discontinuities and lava intrusions from the upper mantle onto the ocean floor. Comparisons of the anomalous gravitational field with deep seismic-sounding data showed that the principal features of the field coincide with the structures in the crust indicated by the sounding data thus making it possible to identify regions of anomalous density. Orig. art. has: 4 figures. [EO]

SUB CODE: 08/ SUBM DATE: none/ ADD PRESS: 4221

Card 2/2 ULR

ACC NR: AP5018290

SOURCE CODE: UR/0387/65/000/006/0091/0095

30  
BAUTHOR: Kosminskaya, I. P.

ORG: Institute of Physics of the Earth, Academy of Sciences, SSSR (Institut fiziki Zemli, Akademiya nauk SSSR)

TITLE: Conference on problems of deep seismic sounding of the earth's crust and upper mantle

SOURCE: AN SSSR. Izvestiya. Fizika zemli, No. 6, 1965, 91-95

TOPIC TAGS: seismology, seismic survey, seismologic station, earth mantle, earth crust, geophysic conference

ABSTRACT: A Symposium on the Problems of Deep Seismic Sounding in the Carpathian-Balkan tectonic zone was held during the 7th Conference of Geophysicists of the Eurasian region in Moscow in June 1964. Scientists from Bulgaria, Hungary, the GDR, Poland, the USSR, and Czechoslovakia participated. They presented survey reports on seismic sounding of the earth's crust by means of explosions, and on the progress of a project for the study of the deep-seated structure of the earth's crust and upper mantle in the Carpathian-Balkan region. Plans for future

Card 1/2

UDC:: 550. 834

KOSMINSKI, Stefan; BADER, Otton

Remote results of the treatment of pancreatic pseudocysts by  
W. Bross's internal drainage. Polski przegl. chir. 28 no.4:  
407-413 Apr 56.

1. Z II Kliniki Chirurgicznej A.M. we Wrocławiu, Kierownik: prof.  
dr. W. Bross, Wrocław, ul. Curie Skłodowskiej 66 (II. Klinika  
Chirurgiczna A.M.).

(PANCREAS, cysts,  
pseudocyst, ther., internal drain. (Pol))

(CYSTS,  
pancreas, pseudocyst, ther., internal drain. (Pol))

1. KOSHTNSKIY, B. V.
2. USSR (600)
4. Mining Industry and Finance
7. Economic significance of analytical methods in mining. Gor zhur. no. 10: 1952.
  
9. Monthly List of Russian Accessions, Library of Congress, January 1953, Unclassified.

KOSMINSKIY, B.

KOSMINSKIY, B.

Under the heel of American monopolies. Mast. ugl. 3 no.6:30-31 Je '54.

(Brazil--Coal mines and mining) (Coal mines and mining--Brazil)  
(MIRA 7:7)

KOSMINSKIY, B.

Mechanization of coal mining in western Europe. Mast.ugl. 4 no.10:  
29-31 0 '55. (MLRA 9:1)  
(Europe, Western--Coal mines and mining)

KOSMINSKIY, B.

New coal cutter-loaders in Western European countries. Mast.ugl.  
4 no.12:25-27 D '55. (MLRA 9:3)  
(Europe, West--Coal mining machinery)

KOSMINSKIY, B.

Work organization in longwalls of the Durham Basin. Mast.ugl. 5  
no.6:29-30 Je '56. (MLRA 9:8)  
(Great Britain--Coal mines and mining)

KOSMINSKIY, B.M.

Coal mining in England. Ugol' 31 no. 3:40-44 Mr '56. (MIRA 9:?)  
(Great Britain--Coal mines and mining)

KOSMINSKIY, BORIS MIKHAYLOVICH

1  
735.1  
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Ugol'naya promyshlennost' kapitalisticheskikh stran; voprosy ekonomiki i organizatsii proizvodstva Coal industry of capitalist countries Moskva, Ugletekhizdat, 1957.

354 p. graphs, map (1 fold.) tables.  
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ALADOVA, Ye.I., tekhnicheskii redaktor;

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mining engineering literature for translation from English to  
Russian. Mekhanizatsiya dobychi uglia i podzemnogo transporta;  
uchebnoe posobie po perevodu s angliiskogo na russkii iazyk gorno-  
tekhnicheskoi literatury (sbornik). Moskva, Ugletekhsdat. [Text  
in English with English-Russian dictionary.] No.5. 1957. 218 p.  
(Coal mines and mining)  
(English language--Translating)  
(Russian language--Translating) (MIRA 10:11)

KOSMINSKIY, B.

In cutter-loader worked longwalls of Great Britain. Mast.ugl. 6  
no.1:28-31 Ja '57. (MLRA 10:4)  
(Great Britain--Coal mines and mining)

KOSMINSKIY, B.  
KOSMINSKIY, B.

~~Organization of coal production in the German Federal Republic~~  
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Design of two-terminal Г-shaped equalizers for amplifier gain control. Elektrosviaz' 15 no.2:53-59 F '61. (MIRA 14:3)  
(Amplifiers(Electronics)) (Electronic circuits)

9.3230 (1013,1139,1147)

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S/106/62/000/002/007/010

A055/A101

AUTHOR: Kosminskiy, O. F.

TITLE: Method of calculation of four-terminal variable equalizers

PERIODICAL: Elektrosvyaz', no. 2, 1962, 45 - 50

TEXT: In an earlier article (Elektrosvyaz', no. 10, 1961), the author described a method for calculating two-terminal variable equalizers. An analogous method is used, in the present article, for calculating the practically most important types of four-terminal variable equalizers containing one or two regulated four-poles and controlled by one or two variable resistances. For the calculation of these equalizers, the author examines the generalized diagram of Fig. 3, where four resistances are proportional to the internal resistance  $R$  of the source  $E$ ,  $\alpha$ ,  $\beta$  and  $\gamma$  being the proportionality coefficients.  $Z_a$  and  $Z_b$  are the input impedances of the regulated four-poles. The operating transmission constant of the examined system can be expressed by the general formula:

$$g = \ln \frac{Z_T}{2R\sqrt{\kappa}} \quad (1)$$

where  $Z_T = E/I_2$ . Besides,  $b_o$  and  $k$  represent, respectively, the initial attenua-

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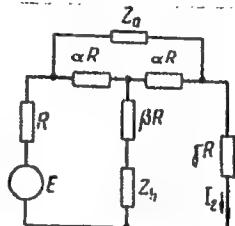
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Method of calculation of...

tion of the variable equalizer and the variation limits of the variable resistances. Five variable equalizer types (shown, respectively, in figures A, B, C, D and E, where VR stands for variable resistance and RFP for regulated four-pole) are examined by the author. He deduces first formulae yielding  $g$  for each of these five types. Using then these formulae as a starting point, he finds for them expressions yielding  $b_0$ ,  $\alpha$ ,  $\beta$  and  $k$ . All these expressions are grouped in a table. At the end of the article, the author reproduces two sets of graphs permitting the estimate of the fundamental relations existing between the various parameters of the variable equalizers. A numerical example of the calculation of a variable equalizer is given. There are 12 figures, 1 table and 2 Soviet-bloc references.

SUBMITTED: October 4, 1961

Figure 3.



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